

DETAILED ACTION

Claim Rejections - 35 USC § 101

1. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

2. Claims 1-10 are rejected under 35 U.S.C. 101 as not falling within one of the four statutory categories of invention. Supreme Court precedent¹ and recent Federal Circuit decisions² indicated that **a statutory “process” under 35 U.S.C. 101** must (1) be tied to a machine or (2) transform underlying subject matter (such as an article or material) to a different state or thing. While the instant claims recites a series of steps or acts to be performed, the claims neither transform underlying subject matter nor positively tie to a machine that accomplishes the claimed method steps, and therefore do not qualify as a statutory process. The recited steps “deriving a set of correlation results by correlating the information signal with a watermark for each of a plurality of relative positions of the information signal with respect to the watermark” and “determining whether a watermark is present by comparing at least part of the set of correlation results with information about an expected shape of a correlation peak in the results” neither transform underlying subject matter nor positively tie to a machine that accomplished the claimed method step. In order for process to be “tied” to a machine, the structure of a machine should be positively recited in a step or steps significant to the basic inventive concept, and NOT just in

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association with statements of intended use or purpose, insignificant pre or post solution activity, or implicitly. Appropriate correction is required.

¹ *Diamond v. Diehr*, 450 U.S. 175, 184 (1981); *Parker v. Flook*, 437 U.S. 584, 588, n.9 (1978); *Gottschalk v. Benson*, 409 U.S. 63, 70 (1972); *Cochrane v. Deener*, 94 U.S. 780, 787-88 (1876).

² *In re Bilski*, 88 USPQ2d 1385 (Fed. Cir. 2008).

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1, 3-7, 10, 12, 14-16 are rejected under 35 U.S.C. 102(b) as being anticipated by Kalker et al (U. S. 6,477,431 B1).

Regarding claim 1, Kalker discloses a method of detecting a watermark in an information signal, comprising:

deriving a set of correlation results by correlating the information signal with a watermark for each of a plurality of relative positions of the information signal with respect to the watermark (column 1, lines 14-44 and column 6, lines 42-55); and

determining whether a watermark is present by comparing at least part of the set of correlation results with information about an expected shape of a correlation peak in the results (column 4, lines 14-30 and column 5, lines 34-42).

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Regarding claim 3, Kalker discloses a method according to claim 1 further comprising comparing the output of comparison with a threshold value to determine the presence of a valid watermark.

Regarding claim 4, Kalker discloses a method according to claim 3 wherein the threshold value varies according to the expected shape of the correlation peak (abstract and column 5, lines 34-42).

Regarding claim 5, Kalker discloses a method according to claim 1 wherein the information about an expected shape of the correlation peak is derived from knowledge of processing operations that the information signal has undergone or expected to have undergone (column 3, lines 31-40).

Claim 6 is similarly analyzed as claim 1 above.

Regarding claim 7, Kalker discloses a method according to claim 6 wherein the previous correlation results are results for: the same type of information signal; an information signal which has been subject to the same processing steps (column 2, lines 14-21 and column 3, lines 8-16); an information signal which has been distributed through the same channel (column 5, lines 57-67).

Claims 10 and 12 are similarly analyzed as claim 1 above.

Regarding claim 14, Kalker discloses a watermark detector according to claim 12 wherein the means for deriving a set of correlation results and the means for determining whether a watermark is present comprise a processor which is arranged to execute software for performing those functions (abstract and column 5, lines 29-33).

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Regarding claim 15, Kalker discloses Apparatus for presenting an information signal comprising means for disabling operation of the apparatus in dependence on the presence of a valid watermark in the information signal, wherein the apparatus comprises a watermark detector according to claim 12 (column 2, lines 64-67).

Claim 16 is similarly analyzed as claim 1 above.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 2, 8 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kalker et al (U. S. 6,477,431 B1) in view of Werner et al (U. S. 7,130,443 B1).

Regarding claim 2, Kalker is silent about the specific details regarding a method according to claim 1 wherein the comparing comprises a cross-correlation of at least part of the set of correlation results with information about the expected shape of a correlation peak.

In the same field of endeavor (watermarking) however, Werner discloses watermarking comprises a cross-correlation of at least part of the set of correlation results with information about the expected shape of a correlation peak (column 9, lines 36-39 and column 10, lines 1-11).

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Regarding claim 8, Kalker is silent about the specific details regarding a method according to claim 1 further comprising identifying clusters of correlation results which are likely to represent correlation peaks and performing the step of determining whether a watermark is present only on the identified clusters of results.

In the same field of endeavor (watermarking) however, Werner discloses watermarking comprises identifying clusters of correlation results which are likely to represent correlation peaks and performing the step of determining whether a watermark is present only on the identified clusters of results (column 11, lines 59-67).

Regarding claim 9, Kalker is silent about the specific details regarding a method according to claim 8 wherein the step of identifying clusters of correlation results comprises determining all correlation results in the set which exceed the threshold value and then determining which of those correlation results are located within a predetermined distance of each other.

In the same field of endeavor (watermarking) however, Werner discloses watermarking comprises (column 15, lines 29-41).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to use a cross-correlation of at least part of the set of correlation results, clusters of results and determining all correlation results in the set which exceed the threshold value and then determining which of those correlation results are located within a predetermined distance of each other as

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taught by Werner in the system of Kalker because Werner provides Kalker a new method and system to improve accuracy and reliability of watermark detection.

Contact Information

7. Any inquiry concerning this communication or earlier communications from the Examiner should be directed to ABOLFAZL TABATABAI whose telephone number is (571) 272-7458.

The Examiner can normally be reached on Monday through Friday from 9:30 a.m. to 7:30 p.m. If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Samir Ahmed, can be reached at (571) 272-7413. The fax phone number for organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only.

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Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Abolfazl Tabatabai/

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